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Indian Standard
SPECIFICATION FOR
TUR CHUNI

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MANAK BHAVAN 9 NAHADUR SHAH ZAFAR MARG

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SPECIFICATION FOR TUR · CHUNI

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**AMENDMENT NO. 1 NOVEMBER 1995
TO
IS 3160 : 1965 SPECIFICATION FOR *TUR CHUNI***

(Page 4, Table 1) — Substitute the following for the existing table:

TABLE 1 REQUIREMENTS FOR *TUR* OR *ARHAR CHUNI*

SL.No.	CHARACTERISTIC	REQUIREMENT		METHOD OF TEST, REF TO	
		Grade 1	Grade 2	Clause of IS 7874 (Part 1) : 1975*	Appendix of This Standard
(1)	(2)	(3)	(4)	(5)	(6)
i)	Moisture, percent by mass, <i>Max</i>	10.0	10.0	4	—
ii)	Crude protein (nitrogen $\times 6.25$), percent by mass, <i>Min</i>	18.0	14.0	5	—
iii)	Crude fat or ether extract, percent by mass, <i>Min</i>	1.7	1.4	7	—
iv)	Crude fibre, percent by mass, <i>Max</i>	14.0	18.0	8	—
v)	Total ash, percent by mass, <i>Max</i>	6.0	7.5	—	A
vi)	Acid insoluble ash, percent by mass, <i>Max</i>	1.0	1.5	10	—

NOTE — The requirements for items (ii) to (vi) are on moisture-free basis.

*Methods of tests for animal feeds and feeding stuffs: Part 1 General methods.

(Page 5, clause 6.1, line 2) — Substitute ‘ C of IS 2052 : 1979**’ for ‘A of IS : 2052 - 1962*’

(Page 5, foot-note with ‘**’ mark) — Substitute ‘Specification for compounded feeds for cattle (*third revision*)’ for the existing title.

(Page 6, clause 7.1, lines 2 and 3) — Substitute ‘3.1 of IS 7874 (Part 1) : 1975**’ for ‘C-1.1 of IS : 2052 - 1962*’.

(Page 6, clause 7.2, line 1) — Substitute ‘IS 1070 : 1992†’ for ‘IS : 1070 - 1960†’.

Amend No. 1 to IS 3160 : 1965

(*Page 6, Appendix A, clause A-1.1, lines 1 and 2*) — Substitute 'Appendix C of IS 2052 : 1979† ' for 'C-2.1 of IS : 2052 - 1962*'.
'

(*Page 6, foot-note with '*' mark*) — Substitute 'Methods of tests for animal feeds and feeding stuffs : Part 1 General methods' for the existing title.

(*Page 6, foot-note with '†' mark*) — Substitute 'Reagent grade water (*third revision*)' for the existing title.

(*Page 6*) — Add the following foot-note at the end:

'‡Specification for compounded feeds for cattle (*third revision*).'

Indian Standard

SPECIFICATION FOR *TUR CHUNI*

0. FOREWORD

0.1 The Indian Standard was adopted by the Indian Standards Institution on 8 July 1965, after the draft finalized by the Animal Feeds Sectional Committee had been approved by the Agricultural and Food Products Division Council.

0.2 *TUR* or *ARHAR CHUNI* is a common livestock feed in India. The formulation of this standard was undertaken by the Animal Feeds Sectional Committee in accordance with its programme planned for the formulation of Indian Standards for the various livestock feeds used in this country.

0.3 This standard contains a clause (*see 4.1*) which calls for an agreement between the purchaser and the vendor at the time of placing orders.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS: 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard prescribes the requirements and the methods of test for *TUR* or *ARHAR* (*Cajanus cajan* L.) *CHUNI* for use as livestock feed.

2. GRADES

2.1 *TUR* or *ARHAR CHUNI* shall be of two grades, namely, Grade 1, and Grade 2.

3. REQUIREMENTS

3.1 Description — *TUR* or *ARHAR CHUNI* shall be the material obtained as a by-product in the preparation of *TUR* or *ARHAR DAL* for human consumption and shall consist of finer broken pieces of *DAL*

*Rules for rounding off numerical values (*revised*).

including germ and a portion of the husk. The material shall be free from adulterants; musty, stale, or other objectionable odour or sourness; and from lumps, dirt, and extraneous matter including iron or other metallic pieces. The material shall be free from fungus or insect infestation.

3.2 The material shall also conform to the requirements prescribed in Table 1.

TABLE 1 REQUIREMENTS FOR TUR OR ARHAR CHUNI

SL No.	CHARACTERISTIC	REQUIREMENT		METHOD OF TEST, REF TO	
		Grade 1	Grade 2	Appendix in IS : 2052-1962*	Appendix in this Specification
(1)	(2)	(3)	(4)	(5)	(6)
i)	Moisture, percent by weight, <i>Max</i>	10.0	10.0	C	—
ii)	Crude protein (nitrogen $\times 6.25$), percent by weight, <i>Min</i>	18.0	14.0	D	—
iii)	Crude fat or ether extract, percent by weight, <i>Min</i>	1.7	1.4	E	—
iv)	Crude fibre, percent by weight, <i>Max</i>	14.0	18.0	F	—
v)	Total ash, percent by weight, <i>Max</i>	6.0	7.5	—	A
vi)	Acid insoluble ash, percent by weight, <i>Max</i>	1.0	1.5	G	—

NOTE — The requirements for items (ii) to (vi) are on moisture-free basis.

*Specification for balanced feed mixtures for cattle.

4. PACKING

4.1 Unless otherwise agreed to between the purchaser and the vendor, the material shall be packed in sound jute bags. The mouth of each bag shall be either machine-stitched or rolled over and hand-stitched with strong jute twine.

5. MARKING

5.1 Each bag shall be marked with the following information:

- Name and grade of the material,
- Name of the manufacturer, and
- Net weight in kg.

5.2 Each bag shall also contain a leaflet as well as have a tag securely attached to it on the outside with the following information:

- a) Name and grade of the material,
- b) Batch or code number,
- c) Guaranteed composition, and
- d) Date of packing.

5.3 Each bag may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act, and the Rules and Regulations made thereunder. Presence of this mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard, under a well-defined system of inspection, testing and quality control during production. This system, which is devised and supervised by ISI and operated by the producer, has the further safeguard that the products as actually marketed are continuously checked by ISI for conformity to the standard. Details of conditions, under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

6. SAMPLING AND CRITERIA FOR CONFORMITY

6.1 Representative samples of the material for tests shall be drawn according to the method prescribed in Appendix A of IS : 2052-1962*.

6.2 Number of Tests — Test for crude protein and acid insoluble ash shall be conducted individually on each of the samples constituting a set of test samples while the tests for the remaining characteristics, specified in Table 1, shall be conducted on the composite sample.

6.3 Criteria for Conformity — A lot shall be considered as conforming to the specification, when:

- a) each of the test results for crude protein and acid insoluble ash satisfies the requirements as specified in Table 1, and
- b) the test results on the composite sample satisfy the requirements for the remaining characteristics specified in Table 1.

6.3.1 If one or more test results do not satisfy the requirements for crude protein and acid insoluble ash, the following procedure shall be adopted for determining the conformity of the material for these two characteristics:

Calculate the mean and range as follows:

$$\text{Mean } (\bar{X}) = \frac{\text{Sum of the test results}}{\text{Number of test samples}}$$

$$\text{Range } (R) = \text{Difference between the maximum and the minimum values of the test results}$$

*Specification for balanced feed mixtures for cattle.

The requirements for crude protein and acid insoluble ash shall be considered as fulfilled if:

$\bar{X} - 0.4 R$ is equal to or greater than the requirement for crude protein, and

$\bar{X} + 0.4 R$ is less than or equal to the requirement for acid insoluble ash.

6.3.2 If the requirements for all the remaining characteristics are not satisfied after testing the composite sample, a test or tests for the characteristic(s) not satisfying the requirement(s) shall be made on each of the test samples in the set. If the test results obtained on each of the individual samples satisfy the requirement(s) of the specification for the relevant characteristic(s), then the lot shall be considered as having satisfied the requirement(s) in respect of such characteristic(s).

7. TESTS

7.1 Tests shall be carried out as prescribed in the relevant appendices specified in col 5 and 6 of Table 1 with the exception that **C-1.1** of IS:2052-1962*, which prescribes the grinding of the material before analysis, is not applicable in this case.

7.2 Pure chemicals and distilled water (see IS:1070-1960†) shall be employed in tests.

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the experimental results.

APPENDIX A

[Table 1, Item (v)]

DETERMINATION OF TOTAL ASH

A-1. PROCEDURE

A-1.1 Weigh accurately about 2 g of the dried material (see **C-2.1** of IS:2052-1962*) in a tared porcelain, silica or platinum dish. Ignite with the flame of a Meker burner for about one hour. Complete the ignition by keeping in a muffle furnace at $600^{\circ} \pm 20^{\circ}\text{C}$ until grey ash results. Cool in a desiccator and weigh. Ignite the dish again in the muffle furnace for

*Specification for balanced feed mixtures for cattle.

†Specification for water, distilled quality (revised).

30 minutes, cool and weigh. Repeat this process until the difference in weight between the two successive weighings is less than one milligram. Note the lowest weight.

A-2. CALCULATION

A-2.1 Total ash (on moisture-free basis),
percent by weight $= \frac{100 (W_2 - W)}{W_1 - W}$

where

W_2 = the lowest weight in g of the dish with the ash,

W = weight in g of the empty dish, and

W_1 = weight in g of the dish with the dried material taken for the test.

INDIAN STANDARDS INSTITUTION

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg
NEW DELHI 110002
Telephones : 331 0131
331 1375

Telegrams : Manaksanstha
(Common to all Offices)

Regional Offices:

	Telephone
*Western : Manakalaya, E9 MIDC, Marol Andheri (East) BOMBAY 400093	6 32 92 95
†Eastern : 1/14 C. I. T. Scheme VII M V.I.P. Road, Manikola CALCUTTA 700054	36 24 99
Northern : SCO 445-446, Sector 35-C CHANDIGARH 160036	{ 2 18 43 3 16 41
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